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10/773,404	02/09/2004	Harukazu Miyamoto	ASAM.0108	6600

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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/773,404	MIYAMOTO ET AL.	
	Examiner	Art Unit	
	LaTanya Bibbins	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 24, 2007 has been entered.

2. In the remarks filed on August 24, 2007, Applicant amended claims 1-16, added claims 17-20, and submitted arguments for allowability of pending claims 1-20.

Response to Arguments

3. Applicant's arguments filed August 24, 2007 have been fully considered but they are not persuasive.

Regarding claims 1-6, Applicant argues that "Lee fails to show that a first location and a second location are located at different locations on the medium and data concerning a maximum linear velocity (Vlmax) and a minimum linear velocity (Vlmin) at the first location and a maximum linear velocity (V2max) and a minimum linear velocity (V2min) at the second location are recorded at a predetermined location on the medium" and that Kobayashi does not show or suggest recording the data including the maximum speed and the minimum speed of the track are recorded on the disk.

Applicant also argues that Lee also fails to show "the first location and the second location are set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed."

Applicant further argues that Kobyashi teaches that "the location of each zone is determined according to corresponding data unit, not according to a predetermined control mode of the disk-shaped information recording medium."

In response to Applicant's argument that Lee fails to show that a first location and a second location are located at different locations on the medium and data concerning a maximum linear velocity (Vlmax) and a minimum linear velocity (Vlmin) at the first location and a maximum linear velocity (V2max) and a minimum linear velocity (V2min) at the second location are recorded at a predetermined location on the medium and Kobyashi does not show or suggest recording the data including the maximum speed and the minimum speed of the track are recorded on the disk, the primary reference Lee discloses storing a maximum and minimum linear velocity on a predetermined location of the storage medium while the secondary reference, Kobayashi introduces the maximum and minimum linear velocities of multiple locations of the medium. Therefore, as stated in the previous office, the obvious combination of Lee and Kobayashi disclose the claimed limitations.

In response to Applicant's argument that Lee also fails to show "the first location and the second location are set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be

performed," note that in Figure 19 Kobayashi shows multiple zones at different radial locations, many of which constitute "edge portions."

In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the location of each zone is determined according to corresponding data unit, not according to a predetermined control mode of the disk-shaped information recording medium) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding claims 7-16, Applicant argues that both Lee and Akahira do not show or suggest controlling the relative moving speed of the energy beam on the basis of the data concerning a maximum linear velocity (Vlmax) and a minimum linear velocity (Vlmin) at a first location on the medium and a maximum linear velocity (V2max) and a minimum linear velocity (V2min) at a second location on said medium.

However, in response to Applicant's arguments, the primary reference Lee discloses storing a maximum and minimum linear velocity on a predetermined location of the storage medium while the secondary reference, Akahira introduces the maximum and minimum linear velocities of multiple locations of the medium. In addition, nothing precludes operation at a linear velocity and as such the predetermined location is in an available linear velocity range. Therefore, as stated in the previous office, the obvious combination of Lee and Akahira disclose the claimed limitations.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). There should be clear support or antecedent basis in the specification for the terminology used in the claims. Applicant employs the term "edge portions" in amended claims 7, 15, and 16, which does not appear in the specification and results in uncertainty as to the interpretation to be given. Correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US PGPub Number 2004/0004921 A1) and further in view of Kobayashi et al. (US Patent Number 5,828,639).

Regarding claim 1, Lee teaches a disk-shaped information recording medium on which information is recorded or from which recorded information is produced by irradiating with an energy beam moving on/along a track relative to said medium, wherein a first location on said medium, data concerning a maximum linear velocity and a minimum linear velocity are recorded at a predetermined location on said medium (see paragraph [0048]).

Lee, however, fails to teach a disk-shaped information recording medium with a second location located at a different location in a radial direction of the medium and that the data recorded at the predetermined location contains data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at said first location and a maximum linear velocity (V2max) and a minimum linear velocity (V2min) at said second location. Lee also fails to teach that the first location and the second location are set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed wherein the predetermined control mode includes at least one of a kind of a method for controlling rotation of the disk-shaped information recording medium, recording power, a recording pulse and a relative moving speed of the energy beam..

Kobayashi, on the other hand, teaches a disc (Figure 17 element 1) with a first location and a second location located at different locations in a radial direction of the medium (see Figure 19 rows 1 and 2, columns 1 and 2), and data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at said first location and a maximum linear velocity (V2max) and a minimum linear velocity (V2min) at said second location (see Figure 19 rows 1 and 3, columns 9 and 10).

Kobayashi also teaches that the first location and the second location are set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed (see Figure 19 and zones 0 and 2 which constitute edge portions) wherein the predetermined control mode includes at least one of a kind of a method for controlling rotation of the disk-shaped information

recording medium, recording power, a recording pulse and a relative moving speed of the energy beam (see the discussion in column 11 lines 3-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc with a plurality of zones as taught by Kobayashi with the optical disc taught by Lee. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to produce an optical disc with increased capacity (see Kobayashi column 10 lines 19-21).

Regarding claim 2, Lee teaches a disk-shaped information recording medium wherein said predetermined location on said medium lies in a control data zone in which data concerning said medium are recorded (see the discussion of the control data zone in paragraph [0033] and the description of the reserved regions 30c-5 and 30c-6 in paragraph [0035]).

Regarding claim 3, Lee fails to teach a disk-shaped information recording medium wherein at least one of undermentioned conditions is satisfied: r1<r2, and V1max<V2max or V1min<V2 min where r1 represents a radial distance of said first location from a center of said medium and r2 represents a radial distance of said second location from said center of said medium. Kobayashi, however, teaches a disk-shaped information recording medium medium wherein at least one of undermentioned conditions is satisfied: r1<r2 (see Figure 19 rows 1 and 2, columns 1 and 2), and V1max<V2max or V1min<V2 min (Figure 19 rows 1 and 2, columns 9 and 10) where r1

represents a radial distance of said first location from a center of said medium and r2 represents a radial distance of said second location from said center of said medium.

Regarding claim 4, Lee fails to teach a disk-shaped information recording medium wherein r1<r2 and that V1min/r1<V2max/r2 are satisfied. Kobayashi, however, teaches an information recording medium wherein conditions that r1<r2 and that V1min/r1 < V2max/r2 are satisfied, where r1 represents a radial distance of said first location from a center of said medium and r2 represents a radial distance of said second location from said center of said medium (see Figure 19 rows 1 and 2, columns 1, 2, 9, and 10).

Regarding claim 5, Lee and Kobayashi fail to teach a disk-shaped information recording medium wherein condition that V1max<V2min is additionally satisfied. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify V1max such that it is less than V2min. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the velocities in order to produce an information recording medium with data zones with distinct minimum and maximum velocities which do not overlap.

Regarding claim 6, Lee teaches a disk-shaped information recording medium wherein at least some of recording/reproducing conditions corresponding to said maximum linear velocities (Vmax) and said minimum linear velocities (Vmin) are recorded at said predetermined location (see Lee paragraph [0048]). Lee fails to teach that the maximum and minimum velocities correspond to said first and second locations.

Kobayashi, on the other hand, teaches a disc with maximum and minimum velocities corresponding to said first and second locations in Figure 19 rows 1 and 2.

Regarding claim 17, Kobayashi wherein the predetermined control mode includes a recording condition for the disk-shaped information recording medium with a predetermined performance (see the discussion in column 11 lines 3-36).

7. Claims 7, 8, 15, 16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US PGPub Number 2004/0004921 A1) and further in view of Akahira et al. (US Patent Number 5,729,513).

Regarding claim 7, Lee teaches a method of controlling disk-shaped information recording medium on which information is recorded or from which recorded information is reproduced by irradiating with an energy beam moving on/along a track relative to said medium, a first location wherein data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at said first location are recorded at a predetermined location on said medium, the predetermined location being in an available linear velocity range, said method comprising the steps of: reproducing said data in precedence to recording or reproduction of the information (see Lee paragraph [0033] where the disc drive records data considering the prescribed recording speed recorded on the disc); Lee fails to teach a second location wherein data concerning a maximum linear velocity (V2max) and a minimum linear velocity (V2 min) at said second location, are recorded at a predetermined location on said medium, the first location and the second location being set to a pair of edge portions of an area in which a

predetermined control mode of the disk-shaped information recording medium can be performed, said method comprising the steps of: controlling relative moving speed of said energy beam such that the linear velocity at said first location lies between said maximum linear velocity (V1max) and said minimum linear velocity (V1min); and controlling the relative moving speed of said energy beam such that the linear velocity at said second location lies between said maximum linear velocity (V1max) and said minimum linear velocity (V2 min).

Akahira on the other hand teaches a disk with a first location and a second location being located at different radial locations on said medium, wherein data concerning a maximum linear velocity maximum linear velocity (V2max) and a minimum linear velocity (V2 min) at said second location, the first location and the second location being set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed, said method comprising the steps of: controlling the relative moving speed of said energy beam such that the linear velocity at said first location lies between said maximum linear velocity (V1max) and said minimum linear velocity (V1min) (see Akahira column 7 lines 1-5 where the first location is between 30 and 40 mm and the velocity at this location lies between V1max which is 7.53 m/s and V1min which is 5.65 m/s); and controlling relative moving speed of said energy beam such that the linear velocity at said second location lies between said maximum linear velocity (V1max) and said minimum linear velocity (V2 min) (see Akahira column 6 line 61 to column 7 lines 1-5 where the second location is between 50 and 60 mm and the velocity at this location is 5.65–6.78 m/s

which lies between V1max which is 7.53 m/s and V1min which is 5.65 m/s also note Figure 4 and the discussion regarding the recording area being divided into three zones with edge portions Z1 and Z3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the disk of Akahira with the controlling method of Lee. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to improve the quality of the amorphous recording marks on the optical disk (see Akahira column 3 lines 1-12).

Regarding claim 8, Akahira teaches a method of controlling a disk-shaped information recording medium control wherein control of said relative moving speed of said energy beam is realized by controlling a rotation speed of said medium (see column 6 lines 43-57 where Akahira teaches a rotational control method and the range of linear velocity of the recording head to the recording track).

Regarding claim 15, Lee teaches a method of controlling a disk-shaped information recording method of recording information on an information recording medium by irradiating with an energy beam moving on/along a track relative to said medium, said method comprising the steps of: reading data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at a first location on said medium said data being recorded at a predetermined location on said medium, (see paragraph [0048]); and recording the information on said medium by controlling a relative speed between said medium and said energy beam on the basis of said data (see paragraph [0033] where the disc drive records data considering the prescribed

recording speed recorded on the disc and paragraph [0019]). Lee fails to teach reading data concerning a maximum linear velocity (V2max) and a minimum linear velocity (V2 min) at a second location on said medium, said first and second locations being located at different locations in a radial direction of the disk-shaped medium.

Akahira, however teaches data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at a first location on said medium and a maximum linear velocity (V2max) and a minimum linear velocity (V2 min) at a second location on said medium, said first and second locations being located at different locations in a radial directionof the disk-shaped said medium, the first location and the second location being set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed (see Akahira column 6 line 61 to column 7 lines 1-5 where the second location is between 50 and 60 mm and the velocity at this location is 5.65–6.78 m/s which lies between V1max which is 7.53 m/s and V1min which is 5.65 m/s also note Figure 4 and the discussion regarding the recording area being divided into three zones with edge portions Z1 and Z3).

Regarding claim 16, Lee teaches a method of controlling a disk-shaped information reproducing method of reproducing information from an information recording medium recorded the information by irradiating with an energy beam moving on/along a track relative to said medium, said method comprising the steps of: reading data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at a first location on said medium said data being recorded at a predetermined

location on said medium (see paragraph [0048]); and reproducing the information recorded on said medium by controlling a relative speed between said medium and said energy beam on the basis of said data (see paragraph [0021]). Lee fails to teach reading data concerning a maximum linear velocity (V2max) and a minimum linear velocity (V2 min) at a second location on said medium, said first and second locations being located at different locations on said medium, the first location and the second location being set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed.

Akahira, however, teaches data concerning a maximum linear velocity (V1max) and a minimum linear velocity (V1min) at a first location on said medium and a maximum linear velocity (V2max) and a minimum linear velocity (V2 min) at a second location on said medium, said first and second locations being located at different locations on said medium, the first location and the second location being set to a pair of edge portions of an area in which a predetermined control mode of the disk-shaped information recording medium can be performed (see Akahira column 6 line 61 to column 7 lines 1-5 where the second location is between 50 and 60 mm and the velocity at this location is 5.65–6.78 m/s which lies between V1max which is 7.53 m/s and V1min which is 5.65 m/s also note Figure 4 and the discussion regarding the recording area being divided into three zones with edge portions Z1 and Z3).

Regarding claims18-20, Akahira discloses wherein the predetermined control mode includes a recording condition for the disk-shaped information recording medium

with a predetermined performance (see Table 1 and the discussion in column 9 line 50-column 10 line 26).

8. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US PGPub Number 2004/0004921 A1) and Akahira et al. (US Patent Number 5,729,513) as applied to claim 7 and 8 above, and further in view of Sato (US PGPub Number 2002/0064110 A1).

Regarding claim 9, Lee and Akahira teach a method of controlling a disk-shaped information recording medium control wherein a method of controlling the rotation speed for information recording is performed by constant angular velocity (CAV) control with a rotation speed (rpm) being constant (see Akahira column 6 lines 43-45). Lee and Akahira fail to teach a method of controlling a disk-shaped information recording medium control method wherein a method of controlling the rotation speed for information recording is performed by one of a control method selected from a group consisting of a constant angular velocity (CAV) control with a rotation speed (rpm) being constant, a constant linear velocity (CLV) control with a linear velocity being constant and a combination of said constant angular velocity (CAV) control and said constant linear velocity (CLV) control.

Sato, on the other hand, teaches a method of controlling a disk-shaped information recording medium control method wherein a method of controlling the rotation speed for information recording is performed by one of a control method selected from a group consisting of a constant angular velocity (CAV) control with a

rotation speed (rpm) being constant, a constant linear velocity (CLV) control with a linear velocity being constant and a combination of said constant angular velocity (CAV) control and said constant linear velocity (CLV) control, and wherein the control method to be actually employed is determined on the basis of result of reproduction of said data (see Sato paragraphs [0061] – [0064] and Figure 4 steps S11 and S16 and Figure 5 where the CAV, CLV and CAV/CLV recording methods are shown).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lee and Akahira with recording control methods used by Sato. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to insure that during recording the optimum recording power does not exceed the maximum output power of the laser diode (see Sato paragraph [0065]).

Regarding claim 12, Lee and Akahira fail to teach a method of controlling a disk-shaped information recording medium control wherein a rotation of said medium is controlled through a constant angular velocity (CAV) control at a radially inner zone of said medium while being controlled through a constant linear velocity (CLV) control at a radially outer zone of said medium. Sato, however, teaches a method of controlling a disk-shaped information recording medium control method wherein a rotation of said medium is controlled through a constant angular velocity (CAV) control at a radially inner zone of said medium while being controlled through a constant linear velocity (CLV) control at a radially outer zone of said medium (see Figure 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of lee and Akahira with that of Sato. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings because the control method of Sato is "effective in making the starting of the CAV-based recording operation at a high recording speed more reliable" (Sato paragraph [0077]).

9. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US PGPub Number 2004/0004921 A1) and Akahira et al. (US Patent Number 5,729,513) as applied to claim 7 above, and further in view of Chen (US PGPub Number 2003/0123352 A1).

Regarding claim 10, Lee and Akahira teach a method of controlling a disk-shaped information recording medium control but fail to teach that linear velocities at other locations than said first and second locations are determined through a linear interpolation. Chen, on the other hand teaches a method of controlling a disk-shaped information recording medium control method wherein the linear velocities at other locations than said first and second locations are determined through a linear interpolation between said minimum linear velocity (V1min) at said first location and said minimum linear velocity (V2min) at said second location and between said maximum linear velocity (V1max) at said first location and said maximum linear velocity (V2max) at said second location (see paragraph [0046] and Figure 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control method of Lee and Akahira with that of Chen. In addition to utilizing the interpolation method to quickly and accurately determine the velocity, one of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to "quickly and acurately determine the optimum writing power" (Chen paragraph [0049]).

Regarding claim 13, Lee and Akahira teach a method of controlling a disk-shaped information recording medium control wherein said data are set as initial values with information of previously recorded control data (see Lee paragraphs [0033] and [0035]). Lee and Akahira fail to teach that optimum conditions are determined by a learning control.

Chen, however, teaches that optimum conditions are determined by a learnng control (see the discussion in paragraph [0049] where the optimum writing power is determined).

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US PGPub Number 2004/0004921 A1) and Akahira et al. (US Patent Number 5,729,513) as applied to claim7 above, and further in view of Mizuno et al. (US Patent Number 6,996,052 B1).

Regarding claim 11, Lee and Akahira teach a method of controlling a disk-shaped information recording medium control wherein a constant angular velocity (CAV) control is adopted for controlling a rotation (see Akahira Figure 4), but fail to specifically

teach that the information recording medium includes a reflective layer, thickness of which is gradually decreased from a radially inner side of said medium toward a radially outer side of said medium. Mizuno, however teaches a method of controlling a disk-shaped information recording medium wherein said information recording medium includes a reflective layer, thickness of which is gradually decreased from a radially inner side of said medium toward a radially outer side of said medium (column 34 lines 10-13), and wherein a constant angular velocity (CAV) control is adopted for controlling a rotation of said medium (column 33 lines 48-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control method of Lee and Akahira with the information recording medium of Mizuno. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to improve the quality of the amorphous marks during recording (see the discussion in Mizuno column 33 lines 64-67 and column 34 lins 1-9).

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US PGPub Number 2004/0004921 A1) and Akahira et al. (US Patent Number 5,729,513) as applied to claim 7 above, and further in view of Morishima (US PGPub Number 2003/0002409 A1).

Regarding claim 14, Lee and Akahira fail to teach a method of controlling a disk-shaped information recording medium control wherein said data are determined on the basis of jitter. Morishima, on the other hand, teach a method of controlling a disk-

shaped information recording medium control wherein said data are determined on the basis of jitter (see Morishima paragraph [0027]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lee and Akahira with that of Morishima. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to produce an information recording medium control method with improved precision and necessary signal processing (as described in Morishima paragraph [0027]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LaTanya Bibbins

THANG V TRAN
PRIMARY EXAMINER